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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/515,674	02/29/2000	Sreenivas Gollapudi	242/199	9849

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EXAMINER

NARAYANASWAMY, SINDYA

ART UNIT PAPER NUMBER

2174

DATE MAILED: 04/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	Application No. 09/515,674	Applicant(s) GOLLAPUDI ET AL.	
	Examiner Sindya Narayanaswamy	Art Unit 2174	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-23 are presented for examination.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time of the invention the invention was made to a person having ordinary skill in the art at the time of the invention to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mehrotra, US-5,822,790 in view of Janigian US-5,303,149.

4. As per claim 1, Mehrotra teaches the invention substantially as claimed including a process for increasing the efficiency of data transfers between a client and a server comprising: identifying data requested by a client (col 1, lines 22-32); identifying prefetch data, said prefetch data comprising information not immediately requested by said client (col. 1, lines 46-55).

Mehrotra does not teach the determining of the existence of data redundancy in the data or the transmitting of a reduced set of data from the server to the client, the reduced set comprising a smaller memory footprint than the original data. However, Janigian teaches the determining of

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the existence of data redundancy in the data (col. 13, lines 19-44) and the transmitting of a reduced set of data from the server to the client, the reduced set comprising a smaller memory footprint than the original data (col. 2, lines 37-46). It would have been obvious to one of ordinary skill in the art at the time of the invention at the time of the invention the invention was made to combine the teachings of Janigian with the teachings of Mehrotra because Janigian's methodology of determining the existence of redundant data and transmitting reduced sets of data eliminates the sending of data repetitively. One with ordinary skill in the art at the time of the invention would have been motivated to do so because it reduces the amount of unnecessary work done by the system.

5. As per claim 2, Mehrotra does not explicitly teach the process of determining the existence of data redundancy performed by calculating row differences between successive rows in the data. However, Janigian teaches the process of determining the existence of data redundancy performed by calculating row differences between successive rows in the data (Fig. 7, col. 6, lines 22-34, col. 7, lines 61-65 – col. 8, lines 1-4).
6. As per claim 3, Mehrotra does not explicitly teach the process of claim 2 in which row differences between successive rows in the data is performed by identifying identical column values for said successive row. However, Janigian teaches the process of claim 2 in which row differences between successive rows in the data is performed by identifying identical column values for said successive rows (Fig. 7, col. 6, lines 22-34, col. 7, lines 61-65 – col. 8, lines 1-4).

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7. As per claims 4-6 Mehrotra and Janigian do not teach the process of claim 2 in which determining the existence of data redundancies in prefetch data is performed by consulting a bitmap or creating a bitmap, corresponding to changes between a first row and a second row of a database table. However Official Notice is taken that comparing rows by consulting a bitmap is well known in the art therefore one of ordinary skill in the art at the time of the invention would have been motivated to do so because it allows for a piece by piece comparison of rows.
8. As per claim 7, Mehrotra and Janigian do not teach the process in which the first and second rows are not consecutive rows of prefetch data. However, Official Notice is taken that making row comparison between non-consecutive rows is well known in the art therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to compare rows in a non-consecutive manner in order to perform a thorough row-by-row comparison.
9. As per claim 8, Mehrotra and Janigian does not teach the process in which the bitmap is a multidimensional bitmap. However, Official Notice is taken that modifying the bitmap in order to create a multi-dimensional map is well known in the art therefore it would have been obvious to one of ordinary skill in the art to maintain a multi-dimensional bit map in order to track changes across multiple rows in a simple manner.

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10. As per claim 9, Mehrotra does not explicitly teach the step of determining the existence of data redundancy in data by identifying multiple copies of an item of information in prefetch data; or the act of transmitting a reduced set of data comprising sending a single copy of an item that has not changed between a first row and a second row teach. However, Janigian does teach the step of determining the existence of data redundancy in data by identifying multiple copies of an item of information in data; and transmitting a reduced set of data comprising sending a single copy of an item that has not changed between a first row and a second row (col. 13, lines 22-46, col. 1, lines 60-68). One with ordinary skill in the art at the time of the invention would have been motivated to combine Mehrotra's teachings with Janigian's step of eliminating data redundancy so because it eliminates duplicate data transmission.

11. As per claim 10, Mehrotra and Janigian do not teach the process comprising: maintaining pointers to the client corresponding to prefetch data and pointing multiple pointers to a single copy in a client cache. However, Official Notice is taken that the use of multiple pointers towards a single copy in memory is a well known concept in the art therefore it would have been obvious to one of ordinary skill in the art to maintain pointers to the client because the use of pointers eliminates the need of multiple copies of an identical item in the cache.

12. As per claims 11 and 23, they are the computer program product and general-purpose computer system claims of claim 1, and they are rejected for the same reasons as claim 1.

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13. As per claims 12 – 20, they are the computer program product claims of claims 2-10 and they are rejected for the same reasons as claims 2-10.

14. As per claim 21, Mehrotra teaches the computer program product of claim 11 in which the prefetch data comprises of information in a database table (cache) (col 1, lines 22-32).

15. As per claim 22, Mehrotra and Janigian do not teach the computer program product where the prefetch data comprises information associated with a web page. However, Official Notice is taken that it is well known in the art that web pages utilize a cache system therefore it would have been obvious to one skilled in the art at the time of the invention to use the cache data storage and retrieval methodology in association with web pages in order to provide access to users over an internet based system.

Response To Argument

16. In the remarks, applicant has argued in substance that:

- (1) Mehrotra does not disclose “transmitting a reduced set of prefetch data from the server to the client,” as recited in claim 1 as amended.
- (2) Janigian does not disclose “transmitting a reduced set of prefetch data from the server to the client,” as recited in amended claim 1.
- (3) Neither Mehrotra and Janigian, either alone or in combination, disclose or suggest “transmitting a reduced set of prefetch data from the server to the client.”

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17. Examiner respectfully disagrees with Applicant's arguments and resubmits that

As to points (1) and (2), the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in **any one** or all of the references. Rather, the test is what the **combined teachings** of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

As to point (3), Mehrotra and Janigian do disclose and suggest, in combination, "transmitting a reduced set of prefetch data from the server to the client." Mehrotra describes in detail how prefetched data (a method of improving cache performance) is retrieved (col. 1, lines 22-46). Although Mehrotra does not teach the step of transmitting a reduced set of data, Janigian does. Janigian teaches the method of sending a reduced set of data from the server to the client. Co. 2, lines 13-46 details how a series of tests are run over a set of data to eliminate duplicates, thus reducing the size of the data set. The Janigian method utilizes a computerized electronic banking network, thereby sending the data from a server to a client.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- a. US 5,499,355 - prefetching
- b. US 5,408,630 – document/data transmission

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19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sindya Narayanaswamy whose telephone number is (703) 305-8473. The examiner can normally be reached on 8 am to 5 pm, first Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kristine Kincaid can be reached on (703) 308-0640. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-9000.

April 2, 2004

Sindya Narayanaswamy

Kristine Kincaid
KRISTINE KINCAID
SUPERVISORY PATENT EXAMINER
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